What Is Claimed Is:

1. A fuel injector comprising:

a housing having an inlet, an outlet, and a longitudinal axis extending therethrough;

a seat disposed proximate the outlet, the seat having a sealing surface surrounding a seat orifice being disposed along the longitudinal axis between the sealing surface and a first channel surface;

a closure member reciprocally located within the housing along the longitudinal axis between a first position displaced from the sealing surface to permit fuel flow through the seat orifice and a second position of the closure member contiguous to the sealing surface to occlude fuel flow;

a metering disc including a second channel surface confronting the first channel surface at an angle oblique to the longitudinal axis, the metering disc having a plurality of metering orifices extending through the disc along the longitudinal axis, the plurality of metering orifices being located about the longitudinal axis on a first virtual circle greater than a second virtual circle defined by a projection of the sealing surface converging at a virtual apex projected on the metering disc; and

a controlled velocity channel formed between the first and second channel surfaces, the controlled velocity channel having a first portion changing in cross-sectional area as the channel extends outwardly along the longitudinal axis to a location cincturing the plurality of metering orifices such that fuel flow exiting through each of the plurality of metering orifices forms a flow path oblique to the longitudinal axis.

2. The fuel injector of claim 1, wherein the controlled velocity channel extends between a first end and a second end, the first end disposed at a first radius from the longitudinal axis with the first and second channel surfaces spaced apart along the longitudinal axis at a first distance, the second end disposed at a second radius proximate the plurality of metering orifices with respect to the longitudinal axis with the first and second channel surfaces spaced apart along the longitudinal axis at a second distance such that a product of two times the trigonometric constant pi (π) times the first radius and the first distance is equal to a product of two times the trigonometric constant pi (π) of the second radius and the second distance.

3. The fuel injector of claim 2, wherein the plurality of metering orifices includes at least two metering orifices diametrically disposed on the first virtual circle.

4. The fuel injector of claim 3, wherein the plurality of metering orifices includes at least two metering orifices disposed at a first arcuate distance relative to each other on the first virtual circle.

5. The fuel injector of claim 4, wherein the plurality of metering orifices includes at least three metering orifices spaced at different arcuate distances on the first virtual circle.

6. The fuel injector of claim 1, wherein the plurality of metering orifices includes at least two metering orifices, each metering orifice having a through-length and an orifice diameter and configured such that an increase in a ratio of the through-length relative to the orifice diameter results in a decrease in the spray angle relative to the longitudinal axis.

7. The fuel injector of claim 1, wherein the plurality of metering orifices includes at least two metering orifices, each metering orifice having a through-length and an orifice diameter and configured such that an increase in a ratio of the through-length relative to the orifice diameter results in a decrease in an included angle of a spray cone produced by each metering orifice.

8. The fuel injector of claim 5, wherein second channel surface comprises a first generally planar surface portion cincturing second and third surface portions, the second and third surface portions projecting from the plane contiguous to the first generally planar surface portion.

9. The fuel injector of claim 8, wherein the second and third surface portions comprise at least two planar surfaces.

10. The fuel injector of claim 9, wherein the third surface portion intersects the longitudinal axis.

11. The fuel injector of claim 10, wherein the plurality of metering orifices is disposed on at least one of the two at least two planar surfaces of the second surface portion.

12. The fuel injector of claim 11, wherein the first channel surface includes at least a portion extending at a taper angle with respect to the longitudinal axis.

13. The fuel injector of claim 12, wherein the taper angle comprises a taper angle of approximately ten degrees with respect to a plane transverse to the longitudinal axis.

14. The fuel injector of claim 12, wherein the first channel surface comprises a portion curved with respect to the at least a portion of the first channel surface.

15. A method of controlling a spray angle of fuel flow through at least one metering orifice of a fuel injector having an inlet, outlet, and passage extending along a longitudinal axis extending therethrough, the outlet having a seat and a metering disc, the seat has a seat orifice and a first channel surface extending oblique to the longitudinal axis, the metering disc having a second channel surface confronting the first channel surface so as to provide a flow channel, the metering disc having a plurality of metering orifices extending through the metering disc along the longitudinal axis, the method comprising:

locating the plurality of metering orifices on a first virtual circle outside a second virtual circle formed by a virtual extension of a sealing surface of the seat projecting on the metering disc such that each of the metering orifices extends along the longitudinal axis, the plurality of metering orifices oriented at respective arcuate distances with respect to each other on the second channel surface that is oriented at a dimpling angle with respect to the longitudinal axis;

imparting the fuel flow with a radial velocity so that the fuel flows radially outward along the longitudinal axis between the first and second channel surfaces; and

flowing fuel through each of the plurality of metering orifices having an orifice length and diameter such that a flow path of fuel with respect to the longitudinal axis is a function of at least one of the radial velocity, dimpling angle, orifice length, and orifice diameter.

16. The method of claim 15, wherein locating further comprises adjusting the flow path of fuel away from the outlet at a greater included angle with respect to the longitudinal axis by reducing the orifice length of each metering orifice with the dimpling angle, radial velocity, and orifice diameter unchanged.

17. The method of claim 15, wherein locating further comprises adjusting the flow path of fuel away from the outlet at a smaller included angle with respect to the longitudinal axis by increasing the orifice length of each metering orifice with the dimpling angle, radial velocity, and orifice diameter unchanged.

18. The method of claim 15, wherein the locating further comprises adjusting the dimpling angle with the radial velocity, orifice length, orifice diameter unchanged such that an increased dimpling angle results in a greater included angle between the flow path of fuel from the outlet with respect to the longitudinal axis.

19. The method of claim 18, wherein the locating comprises adjusting the dimpling angle with respect to a first axis transverse relative to the longitudinal axis and with respect to a second transverse axis orthogonal to the longitudinal and first axes.

20. The method of claim 15, wherein the locating further comprises adjusting a cone size of the fuel flow emanating from the outlet by locating each of the metering orifices at different arcuate distances on the first virtual circle.